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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/007,502	11/08/2001	Jonathan R. Coppeta	1099us	2283

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EXAMINER	
AHMED, SHAMIM	

ART UNIT	PAPER NUMBER
1765	

DATE MAILED: 04/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/007,502	COPPETA, JONATHAN R.	
	Examiner	Art Unit	
	Shamim Ahmed	1765	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 January 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 1/27/05 have been fully considered but they are not persuasive. Applicant argues that Hawking et al does not teach anything about producing curved surfaces by any kind of polishing and argues that Hawking et al teach away from combination with the primary reference of Kane.

In response, examiner states that the argument is not persuasive because the secondary reference (Hawking et al) is relied upon to show the functional equivalency of **chemical polishing** with **mechanical polishing** such as chemical mechanical polishing (see the rejection).

Additionally, mechanical polishing with the aid of chemical presence will increase the polishing rate than that of only chemical polishing and one of ordinary skilled in the art would have been motivated to do so.

It is noted that the primary reference (Kane) already teaches that producing curved topographic features on the optical element (see the rejection).

Therefore, the rejection of the previous office action is repeated herein as below along with rejections to the new claims:

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 17-20 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claims 17-20 are added that include "dicing the optical element to two-dimensional array and the sidewall of the topographic features are substantially orthogonal', which is not described in the specification.

The specification only discloses the dicing typically includes a die saw or scribe or cleave process in order to define scribe or saw lanes in the substrate (see page 6, lines 20-22).

Therefore, the specification does not support the newly cited claims 17-20.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1-9,11-15 and 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kane (4,524,127) in view of Hawkins et al (5,824,236) and further in view of Yoshida et al (5,500,869).

Kane discloses a process of making an optical element such as an array of lens on silicon substrate, wherein topographic features such as blind holes or V-grooves are

formed on the silicon substrate and the substrate is chemically polished to alter the topographic profile to produce a curved optical surface such as lens (col.1, lines 45-52 and figures 1-6).

Kane remain silent about the polishing of the substrate surface is mechanical polishing.

However, in a method of forming lens array, Hawkins et al teach that lens material can be preferably polished by chemical mechanical polishing and also teach that optically polished surface can be formed either by chemical etching/polishing or chemical mechanical polishing (col.8, lines 18-35).

Therefore, it would have been obvious to one of ordinary skilled in the art at the time of claimed invention to combine Hawkins et al's teaching into Kane's process by replacing chemical polishing with mechanical polishing such as chemical mechanical polishing because chemical polishing or etching and chemical mechanical polishing are functionally equivalent as taught by Hawkins et al.

Furthermore, mechanical polishing with the aid of chemical presence will increase the polishing rate than that of only chemical polishing and one of ordinary skilled in the art would have been motivated to do so.

Modified Kane remain silent about the dicing the substrate into optical elements.

However, in a method of making optical elements including lens array, Yoshida et al teach that after forming lens array on a silicon substrate, dicing the substrate in to individual optical devices (col.5, lines 32-35, col.7, lines 3-9 and col.8, lines 27-48).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of claimed invention to employ Yoshida et al's teaching of dicing the substrate into individual devices into modified Kane's process because such modified process will provide a plurality of devices at the same time by reducing the processing cost as taught by Yoshida et al.

As to claims 9 and 11-12, Kane teaches that after polishing the substrate, an optically coating such as anti-reflecting coating is formed on the polished surface (col.3, lines 49-51).

As to claims 17-18, Yoshida teaches that the dicing line (21) is two dimensional (see figure 1) and it would have been obvious to one of ordinary skilled in the art that the diced optical devices have orthogonal wall depending on the types of optical devices to be made.

6. Claims 10,16 and 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kane (4,524,127) in view of Hawkins et al (5,824,236) and Yoshida et al (5,500,869) and further in view of Meyers et al (4,451,119).

Modified Kane discussed above in the paragraph 5 but fail to disclose the polished surface of the surface is coated with a highly reflective layer.

However, in a method of making mirrors, Meyers et al teach that a highly reflective layer is conventionally deposited on a polished surface in order to make mirrors (col.5, lines 45-65 and col.6, lines 1-6).

Therefore, it would have been obvious to one ordinary skilled in the art at the time of claimed invention to combine Meyers et al's teaching into modified Kane's teaching in order to make quality mirrors with high reflectivity as taught by Meyers et al.

As to claims 19-20, Yoshida teaches that the dicing line (21) is two dimensional (see figure 1) and it would have been obvious to one of ordinary skilled in the art that the diced optical devices have orthogonal wall depending on the types of optical devices to be made.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shamim Ahmed whose telephone number is (571) 272-1457. The examiner can normally be reached on M-Thu (7:00-5:30) Every Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nadine G. Norton can be reached on (571) 272-1465. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Shamim Ahmed
Primary Examiner
Art Unit 1765

SA
April 6, 2005